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ABSTRACT

In "modern organizational theory" communication is the focal point for the application of systems analysis to the functioning of an organization. "Systems" have been defined as interacting elements. If the elements interacting are entirely internal, the system is closed; while if the interaction is among internal and external elements, the system is open. Since scholars investigate the behaviors--and their consequences--of the communicative processes within an organization, the use of the open systems approach for this investigation permits more accurate examination of the information diffusion which coordinates, controls, and evaluates the activities of persons within an organization. (JM)

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"General Systems Theory," "Modern Organizational Theory," and Organizational Communication

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Because of the recent interest of communication scholars in "General Systems Theory" and "Modern Organizational Theory" this paper is an attempt to relate some of the significant features of these approaches to theory building to organizational communication theory.

"Something called 'modern organizational theory' has recently emerged," wrote Scott (1961), "raising the wrath of some traditionalists, but also capturing the imagination of a rather elite avantegarde" (p. 8). In little more than ten years, however, Scott's "rather elite avantegarde" has become a major movement united by the premise that "the only meaningful way to study organization is to study it as a system" (Scott, 1961, p. 17). Indeed, according to Sadler and Barry (1970), "The classical and human relations approaches to the study of organizations have been succeeded by new approaches concerned with the study of organizations as systems" (p. 57). These new approaches to the study of organizations are especially significant to researchers, theorists, and practioners of organizational communication. As Johnson, Kast, and Rosenzweig (1964) noted, "Communication plays a vital role in the implementation of the systems concept. It is the connecting and integrating link among the systems network" (p. 378). For just this reason Steil (1971) argued, "an understanding of modern organization theory should profitably enhance the speech-communication scholar's understanding of the organization and in turn--organizational communication" (p. 84). In "modern organizational theory" communication is the focal point for the application of systems analysis to the functioning of organization.

Ehling (1966) was quite definite in his assessment of the potential of systems approaches to problems of organizational communication theory:

> The point of my comments is that there are some new approaches in researching the behavior of individuals and social groups.

> Ludwig van Bertalanffy, Kenneth Boulding, and Anatol Rapoport, among others, have shown the significance of applying these new notions made clear in general systems theory....It is my contention that much of the variability found in recent industrial communications research can be more effectively handled and controlled by the newer methods of analysis than through the traditional social psychological and sociological approaches which have dominated much of communications research during the last three decades (p. 88).

Redding (1968) was no less equivocal when he wrote that, "there is no substitute for systems-thinking in any serious study of organizational communication" (p. 105). In the broadest sense, therefore, our problem as students of organizational communication is the implementation of the observations of Steil (1971), Ehling (1966), and Redding (1968) concerning "modern organizational theory," and the use of a "systems approach" to examine specific problems of information diffusion networks in organizations.

Systems Approaches

Emery (1969) suggested that there are two primary trends of thought from which the systems concept emerges: 1) a concern with the design of complex engineering systems, and 2) concern that progresses from theorizing about biological systems in general to specific social systems (p. 7). The first approach arose from work in such areas as operations research, man-machine systems, and computer simulation. According to Dearden and McFarlan (1966) this approach to the systems concept consists of "freeing ourselves from restraints inherent in manual methods of problem solving" (p. 105). It is essentially a decision-making approach based on mathematical and logical (usually computer oriented) models. While much of the current literature on organizational functioning has focused on the techniques of this approach for solving complex multi-variable problems, this is not what has been

generally included under the label "modern organization theory" and this is probably not the approach most useful to the study of organizational communication.

The more applicable, second approach is best exemplified in the works of Bertalanffy (1962, 1968), Boulding (1953, 1956a, 1956b), and James Miller (1965, 1971a, 1971b). This approach, generally referred to as General Systems Theory, was pioneered by Bertalanffy in his work on an organismic theory of biology in the 1930's. Bertalanffy (1968) defined systems as "sets of elements standing in interaction" (p. 38). If the interaction is entirely internal, the system is closed. If the interaction of elements is both internal and with elements of the environment (external), the system is open. This distinction between open and closed systems provides the most provocative of the systems concepts. Classical and human relations theories of organization were based on the concept of internal regularity. Whether the nature of the regularity was mechanistic as in bureaucratic theory or cyclic as in flow theory, the organization was an entity or identity independent of its social environment. While this mode of analysis is possible in General Systems Theory, through the examination of closed systems, a second mode is possible through open systems analysis (popularly referred to as Open Systems Theory). This second mode is significant since, as Johnson, Kast, and Rosenzweig (1967) noted, "Such a description of a system adequately fits the typical social organization" (p. 12).

A qualification is necessary, as Katz and Kahn (1966) argued:

> Open systems theory is not a theory at all; it does not pretend to specific sequences of cause and effect, the specific hypotheses and tests of hypotheses which are the basic elements of theory.... Open systems theory is an approach and a conceptual language for understanding and describing many kinds and levels of phenomena (p. 452).

The concept of the open system is not itself a theory, but with its focus on universal phenomena it can provide a foundation for future organizational

theories. Typical phenomena for analysis include, according to Bertalanffy (1968), wholeness, growth, differentation, hierarchy, dominance, control, and competition (p. 47).

Sadler and Barry (1970) presented three characteristics which generally are included in "modern organizational theories":

1. Concern with the organization as a whole.
2. Concern with the organization in relation to its environment.
3. Concern with the dynamics of organizational life and organizational development.

Thus the key concepts of "modern organization theory" would be: 1) wholenss, 2) openess, and 3) process. "The systems approach," noted Churchman (1969), "is simply a way of thinking about these total systems and their components" (p. 11).

Systems Thinking

Perhaps the most succinct statement of the characteristics and demands of systems thinking is Chin's (1961):

> The analytic model of system demands that we treat the pnenomena and the concepts for organizing the pnenomena as if there existed organization, interaction, interdependency, and integration of parts and elements. Systems analysis assumes structure and stability within some arbitrarily sliced and frozen time period (p. 202).

The conceptual language for examining organizational wholeness, openness, and process includes, therefore, organization (the arrangement of complete and functioning wholes), interaction (mutual or reciprocal activity--the primary mode of which is communication), interdependency (transfer of effect--so that a change in one part of a system is felt eventually throughout the system), and integration (the formation rule of the whole--such that synergistically the whole is not "more" than the sum of the parts, but the whole is "different" from the sum of the parts).

Boulding (1956b) elaborated the notion of analysis by levels, noting that there exists a hierarchy of complexity, "roughly corresponding to the complexity of 'individuals' of the various empirical fields" (p. 201). Each level of complexity incorporates the lower levels and consequently, "much valuable information and insight can be obtained by applying low-level systems to high-level subject matter" (p. 206). Each level of complexity reflects systems which are both complete (on that level) and parts/elements/components of systems on higher levels. Thus, Koestler (1967) noted that any living system must be analyzed in terms of hierarchy, "wherever there is life, it must be hierarchically organized" (p. 47). Koestler coined the word HOLON (from the Greek holos or whole, and the suffix on suggesting a part or a particle) to be used to analyze the system which is both a complete system with sub-systems, and a subsystem of some larger system. His analysis, therefore, would include the subsystem, the system, and the supra-system (which in other formulations could be considered as the environment of the system).

Katz and Kahn (1966) have developed more fully the notion of organizations as open systems dependent on their environments. They isolated nine characteristics to define all open systems:

1. The importation of energy. Resources (people, materials, information, etc.) are drawn from the environment into the system. No open system is self-sufficient.

2. The through-put. The input is somehow transformed.

3. The output. The system exports some kind of matter/energy into the environment. The output includes both the final products of the through-put and the waste products.
4. Systems as cycles of events. The products sent into the environment furnish the sources of energy for the repetition of the cycle of events. Goods are sold to produce revenue to purchase raw materials to be transformed into goods to be sold to produce revenue, etc.
5. Negative entrophy. Not only does the system import enough energy to maintain itself, but it imports extra energy as a

safety margin to prevent the system from exporting more energy than it imports (death).

6. Information input, negative feedback, and the coding process. Open systems operate and control operations by gathering information from the environment, and from its own operations coding the information, and using it to determine problem areas.
7. The steady-state and dynamic homeostasis. Open systems tend to maintain their basic character by either resisting changes, offsetting changes, incorporating the changes into its basic character, or by developing new characteristics.
8. Differentiation. Crude patterns become more sophisticated and specialized by function. A division of labor occurs.
9. Equifinality. A single end state (goal) can be reached in a variety of ways. Note: as the specialization of function increases, the options available to the system may decrease (paraphrase, pp. 10-26).

These characteristics reflect the creative and constantly emerging nature of open systems. As French (1963) note, "A system is a particular linking of events which has a facilitating effect, or an intended facilitating effect, on the carrying out of a process" (p. 49). In th' concept of process, the organization as a human system (unlike the biological system) exists. "Organizations possess no physical structure," wrote Collins (1968), "Structure is given to social systems by the arrangement of events rather than the arrangements of things" (p. 15).

Churchman (1969) put many of the notions of this conceptual language in perspective by considering four major way in which systems thinking is utilized:

> (1) The advocates of <u>efficiency</u>; they claim that the best approach to a system is to identify the trouble spots, and especially the places where there is waste....and then proceed to remove the inefficiency. (2) The advocates of the use of <u>science</u> in approaching a system; they claim that there is an objective way to look at a system and to build a 'model' of the system that describes how it works. The science used is sometimes mathematics, sometimes economics, sometimes 'behavioral' (e.g., psychology and sociology). (3) The advocates of human feeling, i.e., the <u>humanists</u>; they claim that systems are people and the fundamental approach to systems consists of first looking at the human values: freedom, dignity, privacy....(4) The <u>anti-planners</u>, who believe any attempt to lay out specific and 'rational' plans is either foolish or dangerous or downright evil. The correct 'approach' to systems is to live in them, react to one's experience, and not try to change them...(pp. 13-14).

It is the scientific version of systems thinking that Chin (1961), Emery (1969), Boulding (1956b), Koestler (1967), Katz and Kahn (1966), French (1963), and Colins (1968) presented. They presented models (conceptual languages) for understanding the functioning of organizations. In general, the models recognized organizations as given, identifiable, structures of events with the inherent ability to change. Thus the organization as supra-system (environment) is necessary to provide energy for the survival of its members as systems; and the members as sub-systems are necessary to carry out the processes (events) which give the organization its form and existance.

At this point the efficiency, humanistic, and anti-planning versions of systems thinking become significant by virtue of their focus on value criteria. People and organizations depend upon each other for survival; at the same time they influence each other. It is theoretically probably that people can help create organizations which maximize their personal potential for survival, while the organization can help create people which maximize its potential for survival. Therefore, the criteria for ultimate survival and immediate influence become significant. Churchman's efficiency version of systems-thinking considers inefficiency as the primary threat to survival, accepts the axiom that, "All waste is bad," and gears its actions to the elimination of waste--despite the recognition by the scientific version that negative entrophy demands excess energy as safety margin against death. The humanistic version considers exploitation as the primary threat, accepts the axiom that, "The individual is inviolate," and aims its actions at maximizing individual freedom of choice--despite the scientific version's realization that a system as a cycle of events demands regularity and predictability of behavior. The anti-planning version considers change as the primary threat to sruvival, accepts the axiom, "Work

within the status quo," and acts for the preservation of the current system--despite the scientific version's contention that change is inevitable and equifinality suggests that many different systems could be equally desirable.

Clearly the systems approach to "modern organization theory" provides a conceptual language for understanding the organization as a dynamic and purposeful entity. But simply knowing and understanding the language of the systems concept does not allow us to handle the variability of past research mentioned by Ehling (1966) nor conduct the serious study mentioned by Redding (1968). Therefore, the systems approach of "modern organization theory" must be applied specifically to organizational communication.

Organizational Communication

"In an exhaustive theory of organization," wrote Barnard (1938), "communication would occupy a central place, because the structure, extensiveness, and scope of organization are almost entirely determined by communication techniques" (p. 91). In "modern organization theory" the communicative process does, in fact, occupy a central place. As noted earlier, Johnson, Kast, and Rosenzweig (1964) wrote that "It (the communicative process) is the connecting and integrating link among the systems network" (p. 378). In their influential analysis of the organization as an open system Katz and Kahn (1966) devoted considerable space to communication as the essence of organization.

> In this sense, communication--the exchange of information and the transmission of meaning--is the very essence of a social system or an organization. The input of physical energy is dependent on information about it, and the input of human energy is made possible through communicative acts. Similarly the transformation of energy (the accomplishment of work) depends upon communication between people in each organizational sub-system and upon communication between sub-systems. The product carries meaning as it meets needs and wants, and its use is further influenced by the advertising and public relations material about it. The amount of support which an organization receives from its social environment

> is also affected by the information which elite groups and wider publics have acquired about its goals, activities, and accomplishments.
>
> Communication is thus a social process of the broadest relevance in the functioning of any group, organization, or society. It is possible to subsume under it such forms of social interaction as the exertion of influence, cooperation social contagion or imitation, and leadership (pp. 223-224).

Although Katz and Kahn were operating from an unsophisticated and incomplete definition of communication, they none the less apprehended the significance of the communicative process in human systems. Scott (1961) summarized this view by describing the communicative process as "a mechanism which links the segments of the system together" (p. 20). Thus, in human organizations, communication is the central process integrating the human, physical, financial, and informational elements. Through the acts of communicating the organization is formed and maintained.

Recognizing the creative power of humans communicating, Thayer (1968) observed:

> It is the communication which occurs within it, and the communication that occurs between the organization and its environment, which both defines the organization and determines the conditions of its existence and the direction of its movement (pp. 101-102).

Simon (1957) established that the communicative process is a necessary characteristic of organization. "It is obvious that without communication there can be no organization" (p. 154). Cherry (1957) went a step further, noting that the communicative process is not just a necessary condition for organization, but a sufficient condition. "Communication renders true social life practicable, for communication means organization" (p. 5). Thus there is evidence that an understanding of organizations from a systems perspective requires an understanding of the communicative processes within the organization.

Organizational communication as a field of study attempts to investigate

the behaviors and their consequences which constitute communicative processes within an organization. As Smith, Richetto, and Zima (1972) argued, ". . . organizational communication is conceived of as a general area of empirical research conducted by scholars from a number of fields, all of whom are concerned with the way in which people communicate within their organizations" (p. 270). Within organizations, MacDonald and Farace (1970) observed that ". . . relatively stable and regular patterns of work and communication activities can be observed; the purview of scholars of organizational communication is to describe and analyze these communication and information patterns" (p. 2). These patterns to a large extent determine the functioning of an organization. As Bavelas and Barrett (1951) suggested:

> It is entirely possible to view an organization as an elaborate system for gathering, evaluating, recombining, and disseminating information. It is not surprising, in these terms, that the effectiveness of an organization with respect to achievement of its goals should be so closely related to its effectiveness in handling information. In an enterprise whose success depends on the coordination of the efforts of all its members, the managers depend completely on the quality, the amount, and the rate at which relevant information reaches them. The rest of the organization, in turn, depends on the efficiency with which the managers can deal with this information and reach conclusions, decisions, etc. (p. 368).

This same recognition of the significance of the information diffusion networks within the organization that prompted Barnard (1938) to contend that, "the first executive function is to develop and maintain a system of communication" (p. 226). Scott (1961) elaborated:

> Communication is viewed as the method by which action is evoked from parts of the system. Communication acts not only as a stimuli resulting in action, but also as a control and coordination mechanism linking the decision centers in the system into a synchronized pattern (p. 20).

What is significant is not that patterns and networks do emerge, but that they are constantly emerging. Unrestricted channels of communication in most

organizations would be completely unworkable. No manager would be able to keep up with the myriad of changing inputs: such a system would be chaos. Moreover, such a system would not be "organized." There would be neither structure, nor control, nor hierarchy. The events would be either completely random, or dependent upon organizationally irrelevant factors (e.g., geography). Katz and Kahn (1966) noted that the selection or designation of communication channels is the first step to establishing the organization as a structure of events:

> To move from an unorganized state to an organized state requires the introduction of constraints and restrictions to reduce diffuse and random communication to channels appropriate for the accomplishment of organizational objectives (p. 225).

Moreover, according to French and Bell (1973), the designation of communication channels is a significant step in maintaining the organization as a structure of events:

> A central issue in organizational life, then, is the degree to which members of the organization are permitted to communicate fully with each other about the various organizational subsystems and the degree to which such communication is facilitated (p. 82).

Conclusion

The above discussion suggests two major conclusions. First, "modern organizational theory" through the application of "open systems" concepts provides a potentially significant analytical model for organizational communication scholars. This analytic model is incorporated in the possibility of adopting various perspectives (scientific, humanistic, efficiency, and anti-planning) for utilizing the conceptual language of systems thinking (focusing on openness, wholeness, process, interaction, interdependency, integration, etc.). Second, from this perspective, organizational communication as a field of study would be devoted to the investigation of the regular (formal, informal, task,

social, upward, downward, lateral, horizontal, etc.) patterns, networks, and/or channels of information diffusion and experience sharing through which the activities of persons in organizations are coordinated, controlled, and evaluated.

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